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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,599	03/29/2004	Fumio Nakajima	SON-2973	9712

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EXAMINER

CUTLER, ALBERT H

ART UNIT	PAPER NUMBER
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2622

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10/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/810,599

Applicant(s)

NAKAJIMA, FUMIO

Examiner

Albert H. Cutler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 29 is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 07/31/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement (IDS) mailed on July 31, 2007 was received and has been considered by the examiner.

Response to Arguments

1. Applicant's arguments, see pages 8-11, filed July 31, 2007, with respect to the rejection(s) of claim(s) 1-6 under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Poynton("A Technical Introduction to Digital Video").

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 8-13, 15-22, 24, 25, 28 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 8, 11 and 24, the original disclosure calls for a slope of 5.0 or less (specification, pages 4, 10, 14, 17). The newly submitted claims call for a slope between 1.0 and 5.0. MPEP § 706.03(o) states, "New matter includes not only the addition of wholly unsupported subject matter, but may also include adding specific percentages or compounds after a broader original disclosure". Therefore, these claims are rejected as introducing new matter.

Regarding claims 9, 10, 12, 13, 18, 19, 21, 22 and 25, the Examiner has found no mention of correction curves corresponding to the differentiability class C^1 on any domain, or of correction curves corresponding to an analytic function of any domain in the original disclosure. Therefore, these claims are rejected as introducing new matter.

Regarding claims 17 and 20, the Examiner has found no mention of the equation:

$$\text{Signal}_{\text{OUT}} = a^*(\text{Signal}_{\text{IN}})^Y$$

The Examiner has found no comparison between this equation, and the level of compression of a correction curve of the present invention within the original written disclosure. Therefore, these claims are rejected as introducing new matter.

Regarding claims 15, 16, 28 and 29, Applicant has defined logarithmic correction curves in pages 13-16 of the specification. However, Applicant has provided specific numbers in these equations, and has not defined variables or ranges of variables as contained in the currently claimed:

$$\text{Signal}_{\text{OUT}} = a \cdot \log_{10}(\text{Signal}_{\text{IN}} + b) + c$$

Therefore, these claims are rejected as introducing new matter.

35 U.S.C. 132(a) provides that “no amendment shall introduce new matter into the disclosure of the invention.” Any amendment entered pursuant to 37 CFR 1.114 that is determined to contain new matter should be treated in the same manner that a reply under 37 CFR 1.111 determined to contain new matter is currently treated. See MPEP § 706.03(o). **In those instances in which an applicant seeks to add new matter to the disclosure of an application, the procedure in 37 CFR 1.114 is not available, and the applicant must file a continuation-in-part application under 37 CFR 1.53(b) containing such new matter.**

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 14 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 14 and 26 refer to figures 3 and 4 respectively, stating that the, “at least one correction curve has similar characteristics” to the curves shown in said figures. This language is vague and indefinite. Without a clearly defined set of “similar characteristics”, one of ordinary skill in the art could interpret said “similar

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characteristics" to be any of a multitude of characteristics present in a gamma correction curve. Applicant may clearly define characteristics for the curves of figures 3 and 4 in the specification. However, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 4, 5, ⁷14, 23, 26 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Poynton("A Technical Introduction to Digital Video").

Consider claim 1, Poynton teaches:

A gamma correction device in an image capturing apparatus(page 100, paragraph 3, page 101, figure 6.5), the gamma correction device performing gamma correction on a video signal from an image capturing element on the basis of at least one correction curve having a predetermined input-output characteristic(Gamma correction is performed based on the Rec. 709 correction curve, pages 100-103, figure 6.6.), wherein said at least one correction curve has a slope of 5.0 or less at the

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origin(The slope is 4.5, pages 102-103.) such that a corrected video signal conforms to film properties(see bottom of page 100 through page 101).

Consider claim 2, and as applied to claim 1 above, Poynton further teaches that the slope of said at least one correction curve at the origin is settable based on various conditions(Poynton teaches that the slope at the origin is settable to 4.5 based on Rec. 709(see claim 1 rationale), or 4.0 based on SMPTE 240M(See page 103, Eq. 6.2). Poynton further teaches that much HDTV equipment uses SMPTE 240M parameters. However, Poynton teaches that the slope of Rec. 709 should be used for all but very unusual conditions(i.e. various conditions).).

Consider claim 4, Poynton teaches:

A gamma correction device in an image capturing apparatus(page 100, paragraph 3, page 101, figure 6.5), the gamma correction device performing gamma correction on a video signal from an image capturing element on the basis of at least one correction curve having a predetermined input-output characteristic(Gamma correction is performed based on the Rec. 709 correction curve, pages 100-103, figure 6.6.), wherein said at least one correction curve comprises a composite of a first correction curve segment lying from the origin to a predetermined level of an input signal(The correction curve comprises a first segment lying from the origin to an output tristimulus value of 0.018. See pages 102-103, Eq. 6.1 and figure 6.6.) such that a corrected video signal conforms to a cathode-ray tube monitor(Gamma correction is

applied for the purpose of pre-compensating for the nonlinearity of a CRT, pages 100-101.) and a second correction curve segment lying above the predetermined level(see figure 6.6) of the input signal such that the corrected video signal conforms to film properties(The second curve segment is an exponential power function. See the bottom of page 100 through page 101.), and both correction curve segments are continuously combined and have the same slope at the predetermined level of the input signal(see figure 6.6).

Consider claim 5, and as applied to claim 4 above, Poynton further teaches that the predetermined level of the input signal is settable based on various conditions(Poynton teaches that the predetermined level of the input signal is settable to 0.018 based on Rec. 709(see pages 102-103, Eq. 6.1), or 0.0228 based on SMPTE 240M(See page 103, Eq. 6.2). Poynton further teaches that much HDTV equipment uses SMPTE 240M parameters. However, Poynton teaches that the slope of Rec. 709 should be used for all but very unusual conditions(i.e. various conditions).).

Consider claim 7, and as applied to claim 1 above, Poynton further teaches that the image capturing apparatus is a video camera(see pages 100-101, figure 6.5).

Consider claim 14, and as applied to claim 1 above, Poynton further teaches that said at least one correction curve has similar characteristics to curves (i), (ii), and (iii) shown in Fig. 3(see figure 6.6).

Consider claim 23, and as applied to claim 4 above, Poynton further teaches that the image capturing apparatus is a video camera(see pages 100-101, figure 6.5).

Consider claim 26, and as applied to claim 1 above, Poynton further teaches that said at least one correction curve has similar characteristics to curves (iv), (v), or (vi) shown in Fig. 4(see figure 6.6).

Consider claim 27, and as applied to claim 4 above, Poynton further teaches that said first correction curve segment corresponds to the ITU-709 characteristic curve("Rec. 709", pages 101-103, figure 6.6).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
10. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poynton in view of Hiramatsu(US 2002/0061142).

Consider claim 3, and as applied to claim 1 above, Poynton teaches that said at least one correction curve comprises a plurality of correction curve segments(see pages 102-103, figure 6.6). However, Poynton does not explicitly teach a plurality of correction curves having different slopes and being selectable based on various conditions.

Hiramatsu is similar to Poynton in that Hiramatsu teaches of correcting moving images(paragraph 0003). Hiramatsu also similarly teaches of using gamma curves for image correction(paragraph 0066).

However, in addition to the teachings of Poynton, Hiramatsu teaches that the at least one correction curve comprises a plurality of correction curves having different slopes and being selectable based on various conditions(Different gamma curves are selectable based on characteristics of the image being captured, paragraphs 0066-0069. These gamma curves are stored in an LUT and have different slopes as they are used to lighten and/or darken different portions of the image based on the current scene and lighting.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the at least one correction curve taught by Poynton comprise a plurality of correction curves stored in an LUT and selectable based on various conditions as taught by Hiramatsu for the benefit that different amounts of

gamma correction are necessary for different types of scenes in order to capture images with desirable contrast(Hiramatsu, paragraph 0066).

Consider claim 6, and as applied to claim 4 above, Poynton teaches that said at least one correction curve comprises a plurality of correction curve segments(see pages 102-103, figure 6.6). However, Poynton does not explicitly teach a plurality of correction curves having different predetermined levels of the input signals and being selectable based on various conditions.

Hiramatsu is similar to Poynton in that Hiramatsu teaches of correcting moving images(paragraph 0003). Hiramatsu also similarly teaches of using gamma curves for image correction(paragraph 0066).

However, in addition to the teachings of Poynton, Hiramatsu teaches that the at least one correction curve comprises a plurality of correction curves having different predetermined levels of the input signals and being selectable based on various conditions(Different gamma curves are selectable based on characteristics of the image being captured, paragraphs 0066-0069. These gamma curves are stored in an LUT and have different predetermined levels of the input signals as they are used to lighten and/or darken different portions of the image based on the current scene and lighting.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the at least one correction curve taught by Poynton comprise a plurality of correction curves stored in an LUT and selectable based on various conditions as taught by Hiramatsu for the benefit that different amounts of

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gamma correction are necessary for different types of scenes in order to capture images with desirable contrast(Hiramatsu, paragraph 0066).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC


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SUPERVISORY PATENT EXAMINER